

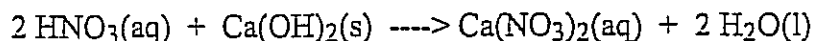
Solutions and Chemical Reactions

1. What is the concentration of a solution which has 100.0g of lead (II) nitrate dissolved in 500mL? $0.604 \frac{\text{mol}}{\text{L}}$
2. How many moles of potassium iodide are in 250mL of a 0.500 mol/L solution? 0.125 mol
What mass of potassium iodide is in the solution? 20.75 g
3. If 250mL of a 0.375 mol/L solution of potassium iodide was mixed with an excess of lead (II) nitrate, what mass of lead (II) iodide precipitate would form? 21.6 g
4. a.) If 250mL of 0.200 mol/L solution of magnesium chloride is mixed with 250mL of 0.300 mol/L sodium hydroxide, what mass of magnesium hydroxide precipitate will be produced? 2.19 g
b.) The other product, sodium chloride, remains in solution. What is the concentration of the sodium chloride solution? $0.15 \frac{\text{mol}}{\text{L}}$
5. When 0.25g Mg(s) is added to 250mL of 3.00 mol/L HCl(aq), hydrogen gas is produced. The magnesium becomes Mg^{2+} (aq) ions and stays in solution.
 - a.) Write the ionic and net-ionic equations for the reaction.
 - b.) Calculate the mass of the hydrogen gas produced? 0.021 g H_2
 - c.) What is the concentration of each of the ions left in the solution?
$$[\text{Mg}^{2+}] = 0.041 \frac{\text{mol}}{\text{L}}$$
$$[\text{Cl}^-] = 3.00 \frac{\text{mol}}{\text{L}}$$
$$[\text{H}^+] = 2.92 \frac{\text{mol}}{\text{L}}$$

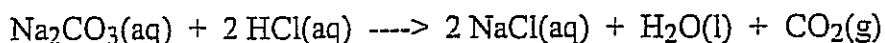
Be Your Best!

SCH 3A Equation Problems and Solutions

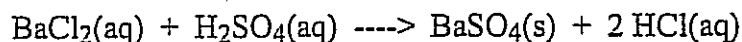
1. How many grams of $\text{Ca}(\text{NO}_3)_2$ can be produced by reacting 125 mL of 5.00 mol/L HNO_3 with an excess of $\text{Ca}(\text{OH})_2$?



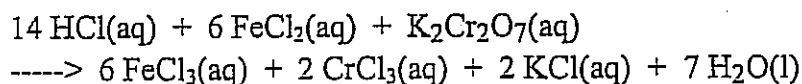
2. If 0.200 g of Na_2CO_3 completely reacts with 30.0 mL of HCl , what is the concentration of HCl in mol/L ?



3. If 50 mL of H_2SO_4 yields 0.300 g of BaSO_4 when reacted with an excess of BaCl_2 , what is the concentration of the H_2SO_4 in mol/L?



4. How many grams of FeCl_2 are required to react with 30.1 mL of 0.165 mol/L $\text{K}_2\text{Cr}_2\text{O}_7$ solution?



5. What is the maximum number of grams of NaCl that can be produced when 50.0 mL of 0.120 mol/L NaOH reacts with 39.4 mL of 0.165 mol/L HCl ?

